

A new coat-of-mail shell, *Chiton tuticorinensis*, from Tuticorin, South India

(Mollusca Loricata Polyplacophora Chitonidae).

By

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With 2 text figures.

One small but unique specimen of the genus *Chiton Linnaeus* (1758) found closely associated with some marine molluscs obtained by Pearl and Chank Exploratory Service, Tuticorin, South India, appears to exhibit so distinct and well-formed conchological characters that hardly admit of its being placed under any known species, recent or fossil, of the group.

The genus *Chiton* seems to be represented in India by a few species only. So, the discovery of this new form may be reckoned as an interesting addition to the list of Indian Chitonidae. But it is said that these animals usually inhabiting the intertidal rocky shores are found more numerous in Australia and New Zealand than in any other parts of the globe (ALLAN 1950: 228). This clearly indicates that the ecological conditions prevailing there and influencing their life and growth may be more encouraging and helpful than anywhere else.

***Chiton tuticorinensis* n. sp.**

Figs. 1, 1a-b.

Diagnosis. Shell small, smooth, oblong-oval (fig. 1) somewhat like *Chiton cimolius* from Australia figured by REEVE (1847: pl. 21 fig. 141), slightly elevated and subcarinated, yellowish with brown tinge (but scarcely one or two central riblets or costae appearing painted with bright chestnut brown or that colour may even be greatly faded in some places and turned almost white); shell-plates I-VIII in number as usual, wide, linearly and regularly arranged overlapping one another from front backwards like tiles in a house-roof and connected together loosely in such a way that the animal can curl itself up suddenly like a round ball on the approach of any enemy or danger as the shy Lemurs or Loricates and Armadilloes usually do for safety of their life; jugum or median ridge blunt and having no special colour or markings, but appearing to be flanked on either side by a long, rather wide and conspicuous bright chestnut band (greatly faded in some places), while its sides stretched out and sloping down gradually somewhat-like in *Chiton granoradiatus* LELOUP (1937)

from Andamans and their outer ends bound together by a narrow whitish leathery girdle (fig. 1a) bearing numerous small, oval, slightly convex and milky-white imbricating scales (fig. 1b showing no trace of any striations even under a high power lens) unlike the large, discrete, raised and well-arranged tubercle-like scales of *granoradiatus*; apical or head valve (No. 1) slightly more large and slanting than the end or tail valve (No. VIII) and marked with

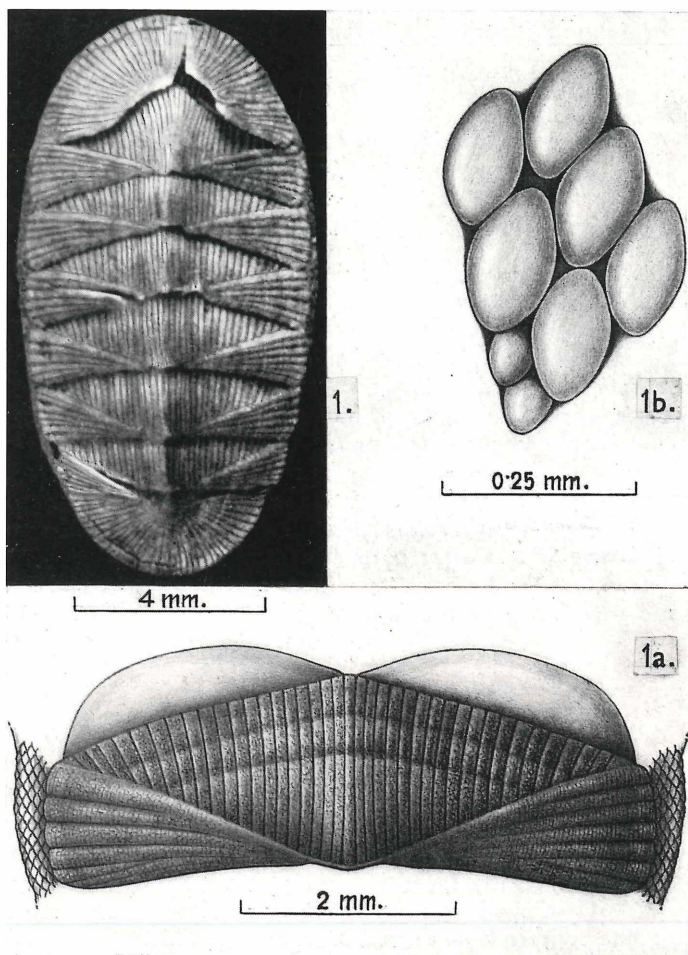


Fig. 1. Dorsal view of the shell of *Chiton tuticorinensis* n. sp. from Tuticorin (holotype, enlarged).

Fig. 1a. Central valve of the same (enlarged) showing the sculptural peculiarities and blade-like sutural laminae in front.

Fig. 1b. Form and arrangement of the scales (enlarged) on the leathery girdle (see also fig. 1a).

about forty regular, close, slightly flattened and finely granulose radiating riblets (some of which tending to split or branch) with narrow interstices between them; end valve slightly concave but similarly ribbed, though the number of riblets appearing less, i. e., about thirty, possibly due to its smaller size; mucro or beak median, front and depressed; central valves (Nos. II-VII) having about eighteen to twenty short but more broad, prominent, close-set, regular, well-arranged and finely granulose longitudinal riblets on either side running almost parallel to the jugum (though tending to lean slightly towards the outer sides) and thereby presenting a pretty mat-like pattern (figs. 1, 1a) somewhat recalling *Chiton virgulatus* SOWERBY (1840) figured by PILSBRY (1892; pl. 32 figs. 54, 55) and *Ch. cimolius* though inclined more towards the latter, but exhibiting the least tendency towards anastomosing and their interstices also more deep than in those of the front and end valves and lateral areas; lateral areas raised and well-marked and looking like isosceles triangles—each bearing five to seven very large, broad, flattened, rather distant, finely and profusely granulose and anastomosing radiating ridges or costae (fig. 1a) and their interstices slightly more wide but shallow, another noteworthy feature observed in this area is that the radiating ridges appearing regularly and concentrically striated throughout somewhat-like in *Ch. affinis* ISSEL from the Gulf of Suez figured by PILSBRY (1892; pl. 25 fig. 93) — striae very fine but clear and more or less equidistant; sinus deep, smooth and narrow, but sutural laminae broad and blade-like (fig. 1a); interior deep brown (including the animal and its head, veil, gills, foot, etc.) unlike in *granoradiatus* where it appears yellowish.

Measurements (in mm.):

L. of shell 12 mm. — D. of shell 6.6 mm. — Ht. of ant. val. 2 mm. — D. of ant. val. 5 mm. — Ht. of end val. 2 mm. — D. of end val. 4.5 mm. L. of animal 9 mm. — L. of foot 6 mm. — D. of foot 1.5 mm.

Holotype. Regd. No. M 18102/3. Deposited in the Zoological Survey of India, Calcutta.

Type-locality. Tuticorin, South India. Coll. Pearl and Chank Exploratory Service, Tuticorin. Date of collection. 13. 1. 1961.

Remarks. *Chiton tuticorinensis* is a small but neatly sculptured species of unusual interest. Its possible affinities with the species, viz., *cimolius*, *virgulatus*, *affinis* and *granoradiatus*, are already discussed above. It appears to differ markedly from *Ch. ceylanicus* SMITH (1904, 1909) from Ceylon not only in having a less strong, less elevated and subcarinated shell with less sloping sides, but also in colouration and sculpture.

The most outstanding contributions made in recent years on Polyplacophores (Chitons or 'Coat-of-mail shells' as they are commonly called or 'Toenail shells' by the aboriginals of Queensland) are those of Dr. EUGÈNE LELOUP of Brussels (1937, 1952) which we have carefully consulted in connection with the present study. Moreover, the entire collection of Chitons in the Zoological Survey of India, Calcutta, is also thoroughly studied and brought up-to-date by him.

References.

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